

## OPERATING SUMMARY

LIBRARY COPY

AUG 1 1974

MINISTRY OF THE  
ENVIRONMENT

LABORATORY LIBRARY  
MINISTRY OF THE ENVIRONMENT

1972

# CHESTERVILLE

TD227  
C44  
W38  
1972  
MOE

c.1  
a aa

### Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at [copyright@ontario.ca](mailto:copyright@ontario.ca)



Ontario

---

Ministry of the  
Environment

135 St. Clair Avenue West  
Toronto 195, Ontario

We are pleased to present you with the 1972 operating summary for the water pollution control plant and water supply system serving your community.

This summary contains data on the performance of the plants as well as relevant financial information. Of particular interest is the review of the year's activities in which significant items of these data are discussed in some detail by the operations engineer and his staff who, through their day-to-day involvement with the operation, are thoroughly familiar with the plants.

We appreciate your continuing interest in protecting both the environment through efficient operation of the wastewater treatment facility and the well-being of the community through the provision of an adequate supply of safe potable water.

D.S. Caverly,  
Assistant Deputy Minister.

D.A. McTavish, P. Eng.,  
Director,  
Project Operations Branch.

TD227  
CS4  
W38  
1972  
MCE

ASHW

MINISTRY OF THE ENVIRONMENT

MINISTER  
Honourable James A. C. Auld

DEPUTY MINISTER  
E. Biggs

ASSISTANT DEPUTY MINISTER  
D. S. Caverly

EXECUTIVE DIRECTOR  
K. H. Sharpe

PROJECT OPERATIONS BRANCH

DIRECTOR  
D. A. McTavish

ASSISTANT DIRECTOR  
C. W. Perry

ACTING REGIONAL SUPERVISOR  
B. W. Hansler

OPERATIONS ENGINEER  
J. Dick

135 St. Clair Avenue West  
Toronto 195

**CHESTERVILLE**  
**WATER POLLUTION CONTROL PLANT**  
**and**  
**WATER SUPPLY SYSTEM**  
  
operated by  
the  
  
MINISTRY OF THE ENVIRONMENT  
  
1972 ANNUAL OPERATING SUMMARY



*Environment Ontario*  
Laboratory Library  
125 Resources Rd.  
Etobicoke, Ontario M9P 3V6  
Canada

## CONTENTS

### WATER SUPPLY SYSTEM

Design Data . . . . .	4
'72 Review . . . . .	5
Project Costs . . . . .	6
Process Data . . . . .	9

### WATER POLLUTION CONTROL PLANT

Design Data . . . . .	.14
'72 Review . . . . .	.15
Process Data . . . . .	.16

## DESIGN DATA

PROJECT NO. 6-0046-59

TREATMENT Ground Water

Well No. 1 - 10" dia. casing  
52' deep  
150 gpm

Well No. 2 - 10" dia. casing  
bottom of screen 49' deep  
40 gpm

Elevated Tank - 125,000 gal.

Distribution System - 6 & 8  
inch dia. pipe.

## **WATER SUPPLY SYSTEM**



# '72 Review

## GENERAL - Water

This system consists of two deep wells, a water distribution system and a 125,000 gallon elevated tank.

The Chesterville water treatment works treated 19.35 million gallons of water in 1972.

The elevated tank was inspected on the exterior and interior by Horton Steel Works with the recommendation that the tank be repainted.

All repairs experienced at the plant in 1972 were of a minor nature.

## EXPENDITURES

The operating costs for 1972 incurred by the Ministry of the Environment were \$7,581.53.

## CONCLUSIONS

The operation and maintenance of the plant has been satisfactory.

# PROJECT COSTS

6-0046-59  
NET CAPITAL COST

\$293, 609. 86

Long Term Debt to MOE

\$293, 609. 86

Debt Retirement Balance at Credit  
(Sinking Fund) December 31, 1972

\$ 86, 286. 71

Net Operating  
Debt Retirement  
Reserve  
Interest Charged

\$ 7, 581. 53

3, 320. 00

16, 465. 34

TOTAL

\$ 27, 366. 87

## RESERVE ACCOUNT

Balance @ January 1, 1972

\$ 23, 503. 63

Deposited by Municipality

-

Interest Earned

1, 541. 43

\$ 25, 045. 06

Less Expenditures

-

Balance @ December 31, 1972

\$ 25, 045. 06

# 1972 COSTS

## OPERATING COSTS

● PAYROLL	64 %
● FUEL	%
● POWER	12 %
● CHEMICALS	3 %
● GENERAL SUPPLIES	%
● EQUIPMENT	2 %
● REPAIRS & MAINTENANCE	7 %
● SUNDRY	12 %
● WATER	%
● TRAVEL	%

## TOTAL ANNUAL COST

NET OPERATING	28 %
DEBT RETIREMENT	12 %
RESERVE	%
INTEREST	60 %

## YEARLY OPERATING COSTS

YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	TREATMENT COSTS
			in cents per 1000 gal.
1972	19.35	\$7,581.53	39 cents

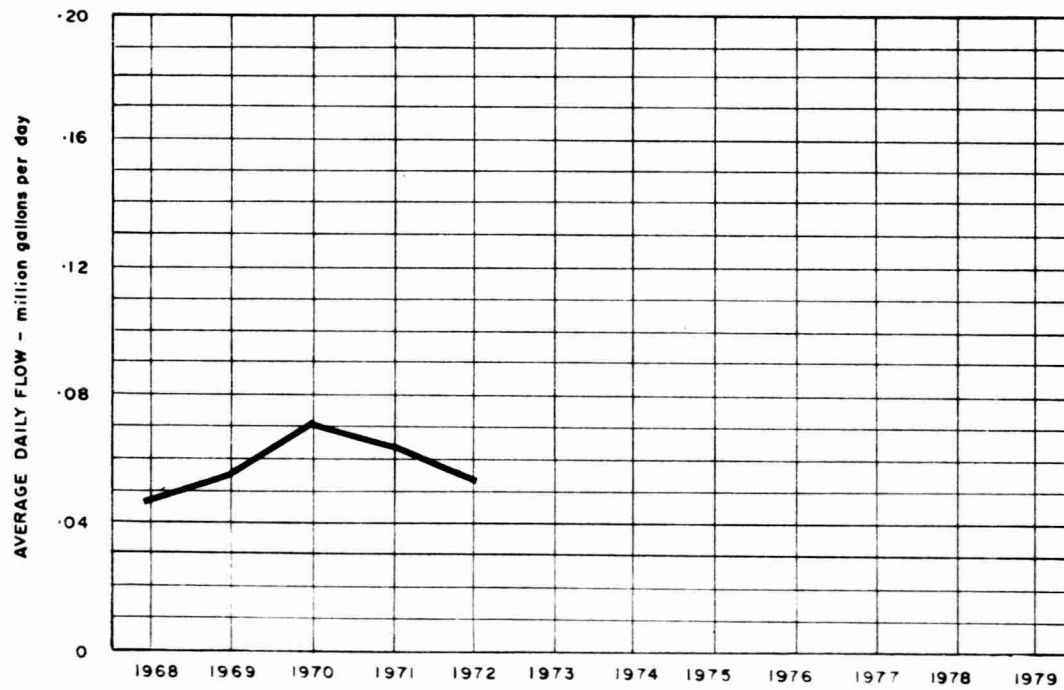
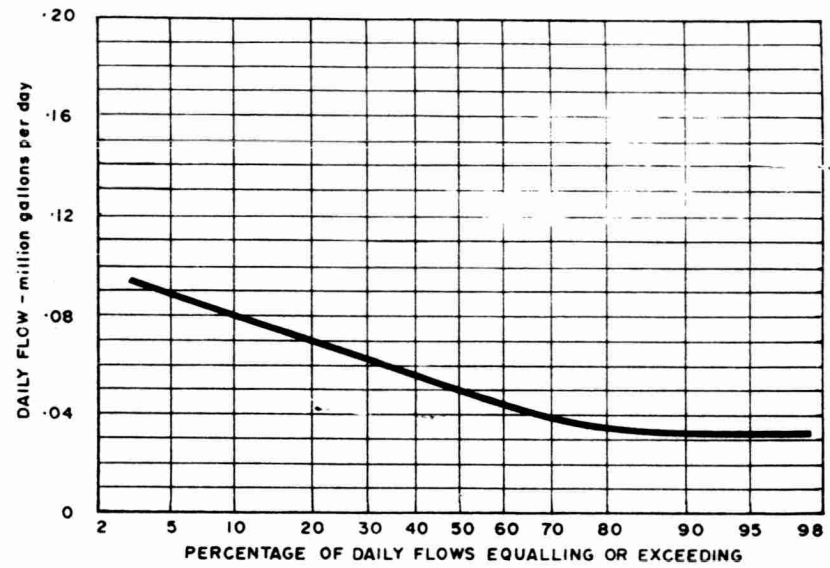
## MONTHLY OPERATING COSTS

6-0046-59

MONTH	TOTAL EXPENDITURE	REGULAR PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDRY	TRAVEL
JAN											
FEB	367.00				203.41				23.59	140.00	
MAR	107.46					100.98				6.48	
APR	266.55				242.94			22.58		1.03	
MAY	3.79									3.79	
JUNE	139.09				139.09						
JULY											
AUG	189.14				90.95			99.22		(1.03)	
SEPT	78.17								78.17		
OCT											
NOV	276.68				76.65	100.98				99.05	
DEC	6153.65	4900.00			131.38				438.69	683.58	
TOTAL	7581.53	4900.00			884.42	201.96		121.80	540.45	932.90	

Brackets indicate credit.

# FLOWS



# PROCESS DATA

## PLANT PERFORMANCE

MONTH	F L O W S			
	TOTAL PLANT OUTPUT	AVERAGE DAILY FLOW	MAXIMUM DAY FLOW	MAXIMUM RATE
	million gallons	million gallons	million gallons	million gallons
JAN	1.53	.049	.062	.230
FEB	1.42	.049	.062	.230
MAR	1.61	.052	.088	.230
APR	1.51	.050	.065	.230
MAY	2.09	.068	.125	.230
JUNE	1.97	.067	.157	.230
JULY	1.73	.056	.088	.230
AUG	1.56	.050	.068	.230
SEPT	1.53	.051	.075	.230
OCT	1.25	.040	.116	.230
NOV	1.43	.048	.081	.230
DEC	1.71	.055	.112	.230
TOTAL	19.35			
AVG.		.053	maximum .157	maximum .230

## CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF Na O Cl gallons	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
											PRE - mg/l	POST - mg/l	
	0	1 - 3	4 - 32	33 - 320	> 320								
JAN	2					2	0	2	0	31.6	2.5		.5
FEB	1							3	0	29.2	2.5		.5
MAR	2					1	0	10	0	33.1	2.5		.5
APR	1					1	0	4	0	28.7	2.2		.5
MAY						1	0	3	0	39.6	2.3		.5
JUNE										39.0	2.4		.5
JULY										30.4	2.1		.5
AUG			2	1				7	0	30.0	2.3		.5
SEPT										30.0	2.4		.5
OCT	1					1	0	3	0	22.2	2.1		.5
NOV								8	3	23.2	2.0		.5
DEC										29.4	2.1		.5
TOTAL	7		2	1		6	0	40	3	366.4			
AVG.	2.5 (NOTE - Average shown is the GEOMETRIC MEAN)									1.0 gallons per day	2.3		.5

## WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as CaCO <sub>3</sub>	3	429	472	360	1	360			80 - 100
ALKALINITY in mg/l as CaCO <sub>3</sub>	3	306	326	296	1	285			30 - 100
IRON in mg/l Fe	3	.78	.90	.55	1	.60			Less than 0.3
CHLORIDE in mg/l Cl <sup>-</sup>	3	102	119	86	1	114			Less than 250
pH in pH units	3	7.7	7.8	7.6	1	7.7			7.0 - 8.5
AMMONIA in mg/l as N	3	.20	.23	.18	1	.021			Less than 0.5
TOTAL KJELDAHL NITROGEN in mg/l as N	3	.35	.36	.32	1	.33			Less than 1.
NITRITE in mg/l as N	3	.015	.022	.011	1	.011			
MBAS in mg/l as LAS	1	.01	.01	.01	1	.01			Absent



## **WATER POLLUTION CONTROL PLANT**

## DESIGN DATA

PROJECT NO.	1-0048-66	Approximately 23,000 linear feet of sewer ranging from 8" - 18"
TREATMENT	Stabilization Pond	1350 feet of 8 inch forcemain
DESIGN FLOW	160,000 gpd	1 General Supply Co. prefabricated sewage pumping station.
DESIGN POPULATION	2,000	360 US gpm @ 25' TDH
		12.5 acre stabilization pond

# '72 Review

## GENERAL - Sewage

This system consists of a pre-fabricated underground pumping station, a forcemain, a sewage collection system, and a 12.5 acre waste stabilization pond.

The Chesterville sewage treatment works treated 40.93 million gallons of sewage in 1972. This represents an average daily flow of .110 million gallons.

It appeared that a considerable amount of ground water gained access into the sewer system. Efforts were being made by plant staff to locate and repair any deficient areas of the sewage collection system.

## EXPENDITURES

The operating costs incurred by the Ministry of the Environment were \$7,793.32. All operating costs reflect a 50 percent salary split between the water and sewage treatment projects.

## REPAIRS AND MAINTENANCE

As with the water system all repairs experienced at the plant in 1972 were of a minor nature. The operation and maintenance of the plant has been very satisfactory.

## CONCLUSIONS

A concentrated effort will be made by the staff during 1973 in an attempt to locate and remove any sources of ground water that are gaining access into the sewer system.

## PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND			SUSPENDED SOLIDS			PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	LOADING	INFLUENT	EFFLUENT		INFLUENT	EFFLUENT
	million gallons	10 <sup>3</sup> gal	mgd	mg/l	mg/l	pounds/acre/day	mg/l	mg/l		mg/l P	mg/l P
JAN	2.20	71									
FEB	1.58	54									
MAR	1.92	62		280		12	1700			16.0	
APR	8.03	268		26	4	5	30	10		2.7	1.8
MAY	3.66	118									
JUNE	3.45	115									
JULY	4.83	156		77	2	8	93	13		6.8	1.3
AUG	3.27	105									
SEPT	1.83	61		120	4	5	120	10		7.5	1.5
OCT	3.28	106									
NOV	3.79	126									
DEC	3.09	100									
TOTAL	40.93	-	-	-	-	-	-	-	-	-	-
AVG.		112	MAXIMUM	88	3	7	180	12		7.1	1.4
No. of Samples	-	-	-	18	7	-	18	7	-	18	7

LABORATORY LIBRARY



\*96936000118523\*